US-PAT-NO:

5443030 A ns DOCUMENT-IDENTIFIER:

Crystallizing method of ferroelectric film

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Brief Summary Text - BSTX (5):

ferroelectric film (including the Pb in accordance with the present invention), Since Pb in a film is likely to be drawn out in a crystallizing step in the restrained by a thermal processing operation so as to effect the crystallizing the film. The same effect can be obtained also with the use of the ozone gas. cause atomic active oxygen for effectively preventing an oxygen deficiency in effectively by the use of short hours' lamp heating in the thermal processing wavelengths from infrared rays to ultraviolet rays is used as a heating lamp. An oxygen gas used in the thermal processing atmosphere is cracked so as to a cap layer is formed on the film surface. The Pb drawing out operation is operation. Thus prepared, a delicate film can be realized with the crystal operation. The Pb drawing out operation in the film is further prevented grain diameter being uniform. Typically, a halogen arc lamp having wide Also, a gas including Pb may be used in the crystallizing step.

Brief Summary Text - BSTX (25):

first method is effected by the irradiation of the ultraviolet rays into ozone or oxygen gas atmosphere. The ozone or oxygen gas atmosphere is composed of ozone or oxygen gas equivalent in quantity to the pressure of 10 through 50 The oxygen atomic atmosphere can be formed, for example, as follows.

Torr normally at 650. degree. C.

Brief Summary Text - BSTX (26):

When the When the **ultraviolet** rays are irradiated is caused. ##STR1## ultraviolet rays are irradiated upon the ozone gas as shown in the following The ultraviolet rays are desirably 185 nm or lower in wavelength. upon the oxygen gas, the O.sub.(1D) is caused. equation, the O.sub. (1D) is caused.

Claims Text - CLTX (19):

a perovskite type crystal structure, the thermal heat treatment being conducted in an oxygen atomic atmosphere, the oxygen atomic atmosphere conducting a thermal heat treatment whereby the ferroelectric film is being formed by irradiating ozone with ultraviolet rays. changed to have

Claims Text - CLTX (22):

12. The method of claim 9, wherein the ultraviolet rays have a wavelength not greater than 185 nm.

Claims Text - CLTX (25):

being formed by irradiating ozone with ultraviolet rays having a wavelength not changed to have a perovskite type crystal structure, the thermal heat treatment greater than 185 nm in order to form many crystal nuclei and to confine growth being conducted in an oxygen atomic atmosphere, the oxygen atomic atmosphere conducting a thermal heat treatment whereby the ferroelectric film is of crystal grain to a small diameter.

Claims Text - CLTX (27):

15. The method of claim 13, wherein the oxygen atomic atmosphere is formed

by irradiating ozone with **ultraviolet** rays having a wavelength not greater than 185 nm for one minute.

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